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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Tae Soo Park

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EXAMINER

CHANG, AUDREY Y

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 11/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/826,244	PARK, TAE SOO	
	Examiner	Art Unit	
	Audrey Y. Chang	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claims 1-19 are objected to because of the following informalities:

(1). The phrase “convertible regions” recited in claim 1 is confusing and indefinite since the claim fails to teach what is the physical or optical condition of these convertible regions for it to make the device *capable* of three dimensional image display.

(2). The phrase “aligned with” recited in claim 5 is confusing and indefinite since it is not clear what does it mean by “aligned”.

(3). The phrase “adjacent thereto” recited in claim 6 is confusing and indefinite since it is not clear how could the upper right and lower left transparent regions be capable of being *adjacent* thereto.

(4). It is not clear what is the predetermined number of the parallax images. The number therefore is arbitrary.

(5). **Claim 12 fails** to teach the criterions for this device to provide stereoscopic image display. The claims fail to teach the critical function and relationship between the transparent regions and the parallax images to make the device capable of displaying stereoscopic image.

(6). It is not clear how exactly can the controller control the distance between the display panel and the mask, (with regard to claims 11 and 13). The specification and the claims fail to teach explicitly how exactly can the display panel and the mask be moved.

(7). The phrase “when the number of parallax image is *small*” and the phrase “when the number of parallax images is *large*” recited in claims 14 and 15 are confusing and indefinite since it is not clear what is considered to be small or large with respect to the number of parallax image. What is the basis for determining or defining “small number” and “large number”.

(8). Claim 17 is confusing and indefinite since it is not clear what does it mean by “detecting a portion of the parallax image having no parallax”? If it is a parallax image how can them it has no parallax? The claim also fails to provide any logical relationship with its based claim.

(9). The phrase “the portion of the parallax images having no parallax” recited in claim 18 is confusing and indefinite since it is impossible for a parallax image having no parallax. If this is true then the image is not parallax image to begin with.

(10). It is not clear how could the controller be capable of aligning the transparent regions and opaque regions as recited in claim 19 and what does it mean by aligning it along horizontal direction? How does this horizontal direction relate to the parallax images?

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-6, 8-10, 12, and 14-19 are rejected under 35 U.S.C. 102(b) as being anticipated by the patent issued to Taniguchi et al (PN. 6,094,216).**

Taniguchi et al teaches a *stereoscopic image display apparatus* that is comprised of an *image display* (1, Figure 1) serves as the *display panel* for displaying a plurality of *parallax images* (Rs and Ls) and a *barrier* comprises a *spatial light modulator* (2) having *transparent regions* and *opaque regions*, serves as the *convertible regions*, alternatively arranged, wherein the spatial light modulator serves as the *mask* such that the transparent regions allows the right eye perspective image (Rs) and left eye perspective images (Ls) to reach the right eye (AR) and left eye (AL) of an observer respectively and the *opaque*

regions prevents the right eye perspective images to reach left eye and prevents the left eye perspective images to reach right eye to enable the stereoscopic viewing condition, (please see Figures 1, 2A, 2B, 4A, 4B, 15A, 15B, 16B, 17, 18, 19A, 19B). The mask or the spatial light modulator (2) is placed *in front* of the image display panel.

With regard to claims 10 and 12, Taniguchi et al teaches that a *controller* (please see Figure 1) is provided to convert a portion of the convertible regions into transparent regions depends on the number of the parallax images, (please see the explicit teachings of different transparent/opaque regions patterns for different parallax images arrangements shown in Figures 2A, 2B, 4A and 4B).

With regard to claims 2-3, Taniguchi et al teaches that the mask or the spatial light modulator comprises a *liquid crystal display panel* wherein liquid crystal display segments forming the transparent and convertible regions, (please see column 11, lines 9-17).

With regard to claims 4-6, Taniguchi et al teaches that the transparent regions of the mask or spatial light modulator do not aligned in the perpendicular direction, (please see Figure 4B). A left side upper transparent region aligned with a right side lower transparent region and a right side upper transparent region aligned with a left side lower transparent region as shown in Figures 4B, 16B, 17, 19B, 20B).

With regard to claims 8, 9, 17 and 18, Taniguchi et al teaches the convertible regions of the spatial light modulator or mask are converted to transparent regions for the regions of display panel displays no parallax images, (please see Figure 18).

With regard to claims 14-16, Taniguchi et al teaches that the number of transparent regions and therefore the size of transparent regions is in accordance with the number of parallax images, (please see Figures 4A, 4B, 17). The opaque regions are larger than the transparent regions as shown in Figure 4B.

With regard to claim 19, the controller aligns the transparent and opaque regions of the spatial light modulator or mask along horizontal direction, (please see Figure 4B).

This reference has therefore anticipated the claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 7, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Taniguchi et al.**

The stereoscopic image display apparatus taught by Taniguchi et al as described for claims 1 and 12 above has met all the limitations of the claims.

With regard to claim 7, **Taniguchi** et al teaches that for *full color display*, (Figure 30), the right eye parallax image and the left eye parallax image are each including red, blue and green pixels. The full color right eye parallax image pixel therefore is represented by three color pixels. This implicitly means that in order for the transparent region to properly direct each of the color pixel to the proper eye, the transparent regions has to have a size in accordance with the size of the color pixel, which therefore will be *one third* of the original pixel. Such modification therefore is obvious to one skilled in the art for the benefit of allowing the full color stereoscopic image be properly observed.

With regard to claims 11 and 13, Taniguchi et al teaches that the transparent regions and the opaque regions of the mask or the spatial light modulator is controlled by the controller which takes into the account of the distance between the display panel and the mask, (please see Figure 1, distance D). This reference however does not teach explicitly to “control” a distance between the display panel and the mask. The claims fails to teaches what does it means by “control the distance” it therefore can only be examined in broadest interpretation. Since the distance information is used to determine the pattern of the

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mask, (i.e. the size and locations of the transparent and opaque regions), this controller is in a way controls the distance and it would have been obvious to one skilled in the art to make the display panel and the mask have a relative distance between them that is in accordance with the information used in the controller to determine the mask pattern for the benefit of allowing the best mode stereoscopic viewing condition be established.

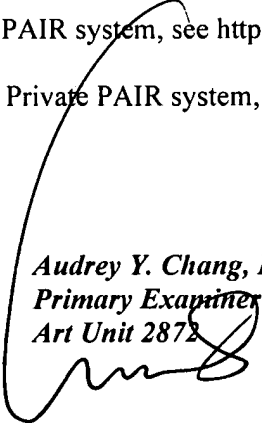
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Audrey Y. Chang, Ph.D.
Primary Examiner
Art Unit 2872



A. Chang, Ph.D.